ultimate number of toes. This imperfection of a subsequently most important pair of limbs, in contrast with the perfection of a pair which are afterwards much weaker, is doubtless in accordance with the general law, according to which early completion of form limits growth.

In the anatomy of the adult animal it may be interesting to mention the existence of a long but fine *ductus Botalli*, showing that even before birth the formation of the partitions of the heart arrives at the same completeness as in Placental Mammals. The dissection of the embryo itself was not made, on account of the rarity of the specimen.

Our investigation of the unborn embryo still in the tuba, when compared with Owen's of the embryo immediately after birth, may make it certain, from the agreement in size and development, that the embryo makes no considerable stay and undergoes no growth and development in the other sexual passages.—*Verhandl. des Naturh. Vereins zu Heidelberg*, v.

On the Oviposition of Mantis religiosa.

By Edmond Perrier.

It has long been known that the ova of *Mantis religiosa* are enclosed in a case which has sometimes been described as a silky case. In the course of last September I witnessed the oviposition of these insects, and can give an exact account of the process employed by the female *Mantis* in fabricating her case.

The material of which this shelter is composed has nothing of the aspect of silk. At the moment when it is ejected it is a frothy liquid very similar in appearance to the frothy liquid with which the larvæ of *Cercopis* surround themselves, but rather less transparent. This matter becomes solidified very quickly, and thus forms for each of the eggs a sort of cell, in which it remains enclosed.

To build its case the *Mantis* employs two instruments—the extremity of its abdomen and the extremity of its elytra. The insect, clinging to the stalk of a broom-plant or of a fern, begins to deposit some portions of its frothy liquid, and sustains them by means of the extremity of its elytra, which form a sort of spoon, at first preventing the liquid from flowing downwards, and then constituting an actual natural mould, in which the first layers of the nest are fashioned. Very soon the latter presents a form very similar to that of a swallow's nest. The *Mantis* then moves the extremity of its abdomen upon the circumference of the nest. The terminal filaments are elevated and spread out; they do not appear to play any very important part in the oviposition. In proportion as the extremity of the body is directed towards a point, the contractions of the abdomen drive on both the frothy liquid and the eggs. The elytra remain motionless, although applied pretty strongly to the consolidated part of the nest, upon which we can distinguish the traces which they have left, which forms a sort of median longitudinal ridge. It is evident that by their adhesion to the nest they

limit the course of the abdomen, and thus render the form of the *building* regular.

The latter presents externally numerous very irregular, circular, transverse ridges, corresponding to the layers successively deposited by the *Mantis*. It may easily be conceived that these layers remain distinct, as each of the halves of the nest is already consolidated when the *Mantis* returns to it to deposit a new layer of eggs and of frothy liquid. The nest has also a generally ovoid form. While it is still fresh it is of a slightly yellowish-white colour; but in the course of a short time this tint passes into a bright brown, whilst the total volume of the nest diminishes sensibly.

When the oviposition is completed, the *Mantis* quits the nest by climbing up vertically. A certain quantity of liquid continues to be given off, becomes consolidated as the *Mantis* climbs, and thus forms a sort of little column, which surmounts the nest like a lightning-conductor.

The *Mantis* dies two or three days after having accomplished its work. It clings by its anterior feet to a branch, extends its four posterior legs, and remains thus suspended, without motion, or only moving when it is disturbed, until the moment of its death, which does not modify its attitude in any way.—*Annales des Sci. Nat.* 5e sér. tome xiv. art. 10.

Echinococcus *in* Macropus major.

By H. A. Pagenstecher.

The occurrence of *Echinococcus* in a species of kangaroo has been recorded by Davaine. The author found in the thoracic cavity of a specimen of *Macropus major*, killed at the Zoological Garden of Cologne, a great quantity of *Echinococci*. They appeared to be identical with the ordinary *Echinococcus* of man and the ruminants, and, on administering them to two dogs, one of those animals was found on the thirty-sixth day to contain from six to eight specimens of the true *Tænia echinococcus*. The author remarks that, from the wide distribution and the isolation of the species, we may regard *Echinococcus* as a very ancient form of *Tænia*.—*Verhandl. Naturh. Vereins zu Heidelberg*, v.

On a new case of Hypermetamorphosis in Palingenia virgo *in the Larva-state, and Analogies of this Larva with the Crustacea.* By N. Joly.

Having attended for some years to the embryogeny of the Ephemerinæ, and especially to that of *Palingenia virgo*, I was still unable to hatch this neuropterous insect in my laboratory. More fortunate this year, I have at last succeeded in following the development of the insect in the egg, and to procure its exclusion, so as to fill up an important gap which I regretted to find in the interesting memoirs of Swammerdam, Réaumur, and Christian Scheffer. Long since* I

* Comptes Rendus, September 1846.